

**Conventional tools**

1 suction pressure gage	or assembly tester	1 bar gage pressure to 10 bar gage pressure
1 high pressure gage		0–40 bar gage pressure
3 thermometers		– 20 °C + 70 °C
1 hygrometer		

**Note**

On engine M 102, during test for cooling capacity, pull off coupling on 100 °C switch for electromagnetic fan coupling and connect to ground, so that the fan is continuously running along.

For tests in workshop, in the event of complaints due to insufficient cooling or heating capacity and for trouble diagnosis on air conditioning systems, proceed according to the following test method, which is applicable for ambient temperatures from + 20 °C to + 40 °C.

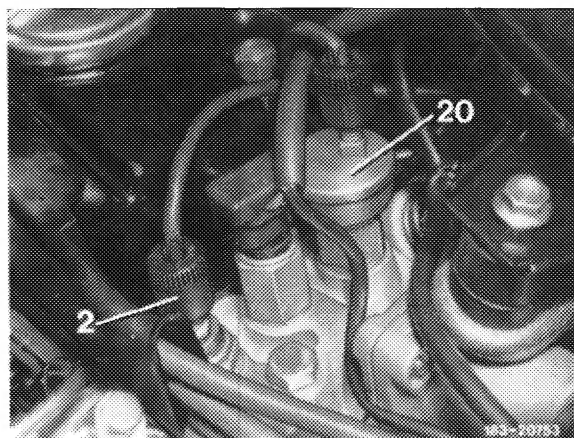
All control values can be read after 10 minutes of constant operation. The values named are max. values and should not be exceeded.

**A. Refrigerant capacity****Test**

The vehicle should not be exposed to sunshine before and during test.

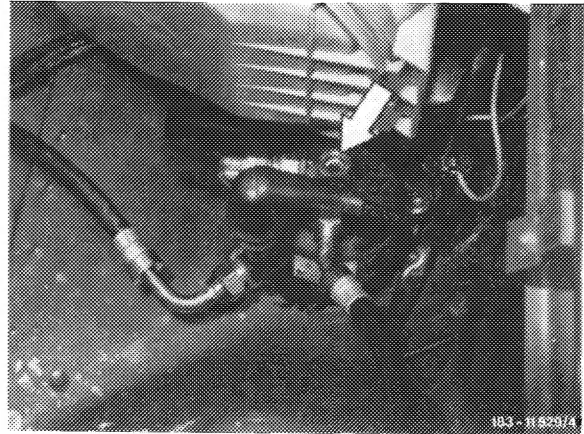
- 1 Test tension of V-belt for compressor drive.

Layout 100 °C – switch for M 102  
20 Temperature switch 100 °C for  
electromagnetic fan coupling



2 Push function selection button "c" and run engine at idle. On sight glass in receiver dehydrator, check whether the coolant flows through free of bubbles shortly after switching on electromagnetic clutch. If refrigerant charge is insufficient, fill up system. If refrigerant loss exceeds 200 g, check system for leaks.

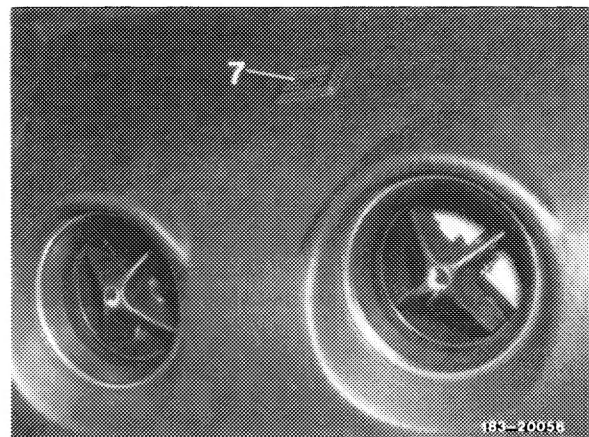
3 Open elements for center nozzles, as well as left-hand and righthand side vents.



3 Open elements for center nozzles, as well as left-hand and righthand side vents.

4 Attach a thermometer for outside air temperature (ambient temperature) approx. 2 m from driver's side.

5 Place a hygrometer into storage tray of center console.

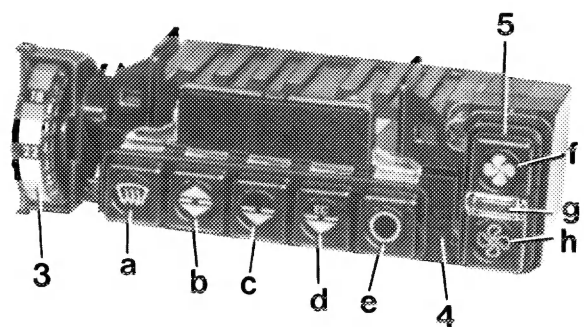


6 Connect suction and pressure gage to service valves.

7 Plug one thermometer each into center nozzle and lefthand side vent.

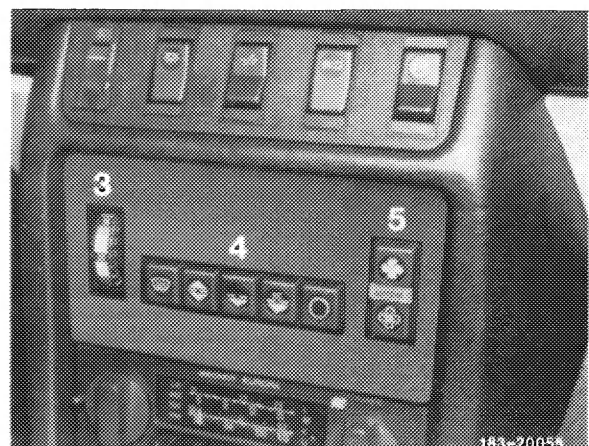
8 Open window, close vehicle doors and engine hood.

9 Temperature dial engaged in "MIN" position. Push blower switch (f) 6th stage.



183-17660/1

10 Run engine at approx. 2000/min.



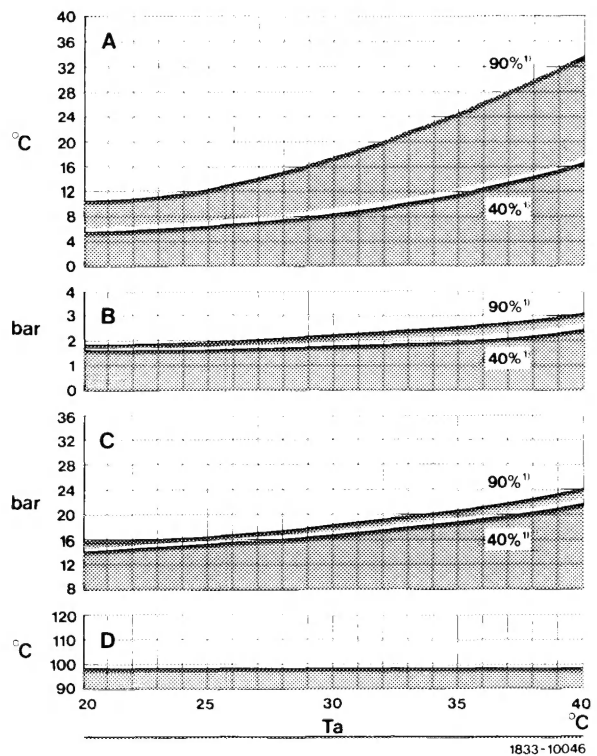
Layout control unit  
3 Temperature dial  
4 Pushbutton switch unit  
5 Blower switch

11 Read data on thermometers and pressure gages, as well as on hygrometer, after an operating period of approx. 10 minutes and compare with values on table.

**Note:** Specified data are max. data and should not be exceeded.

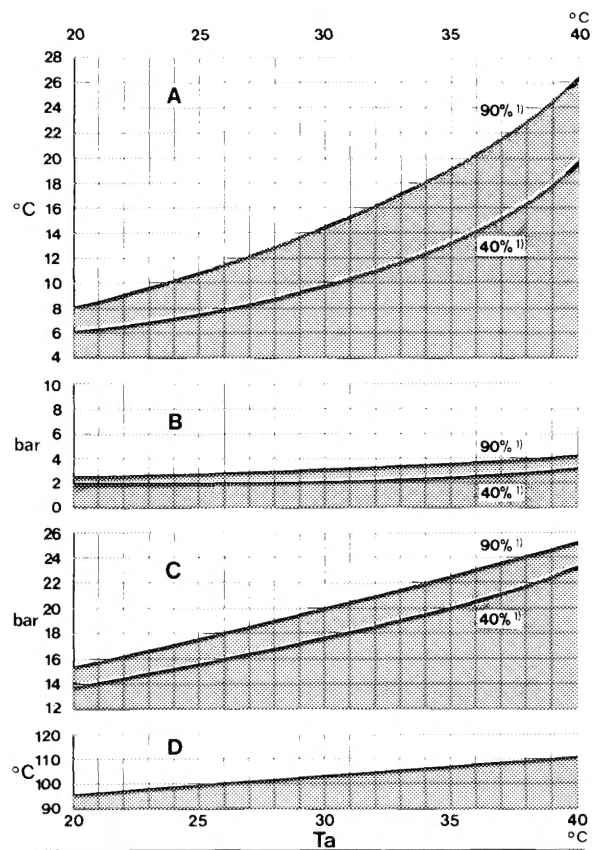
#### Engine 102

- 1) Relative humidity
- Ta Outside temperature (°C)
- A Air outlet temperature (°C)
- B Pressure before compressor (bar)
- C Pressure after compressor (bar)
- D Coolant temperature (°C)

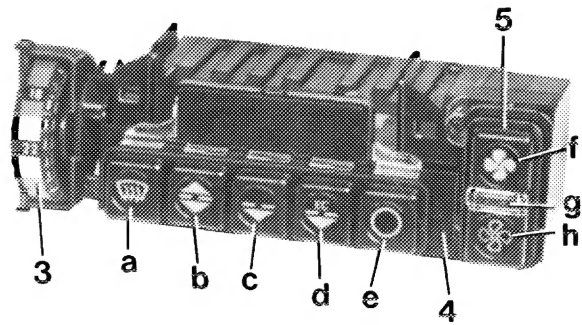


#### All engines except engine 102

- 1) Relative humidity
- Ta Outside temperature (°C)
- A Air outlet temperature (°C)
- B Pressure before compressor (bar)
- C Pressure after compressor (bar)
- D Coolant temperature (°C)

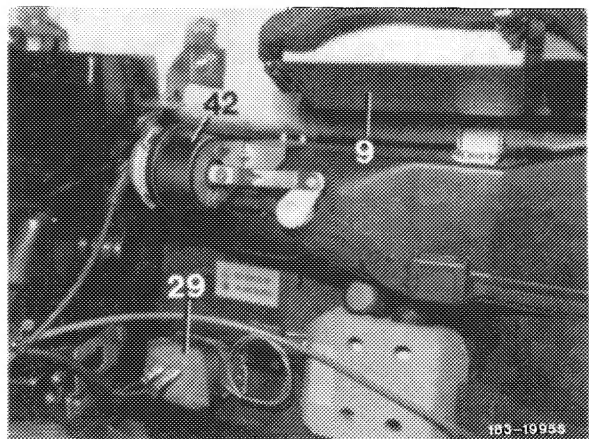


12 Check cutout temperature of ETR switch (29) by plugging 1 thermometer into center nozzle. Push blower switch (h) 1st stage and pushbutton (c) in control unit and run engine at approx. 2000/min. After 3rd cutout of electromagnetic clutch, the outlet temperature should amount to approx.  $+4^{\circ}\text{C}$ , but should not be less than  $+3^{\circ}\text{C}$ .



183-17660/1

**Note:** If cooling capacity is insufficient or outlet temperatures are below  $+3^{\circ}\text{C}$ , check capillary of ETR switch (29) for correct assembly (slit into guide tube up to red mark) or replace ETR switch.

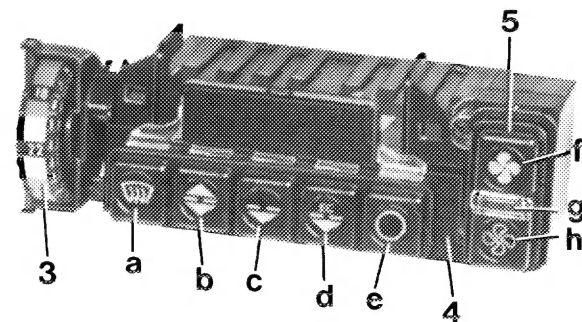


183-19955

## B. Heating capacity

### Test

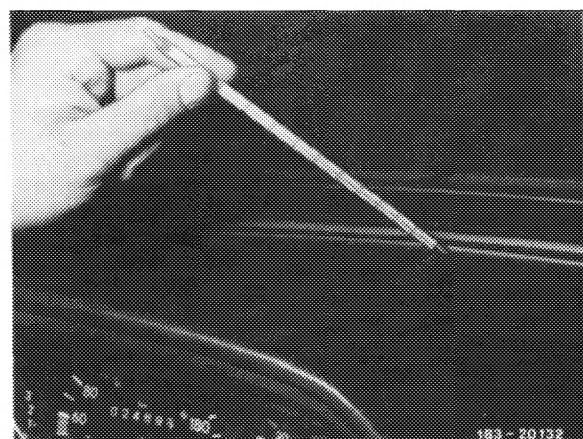
- 1 Start vehicle engine.
- 2 Push function selection button "a". Blower operates in 6th blower stage.



183-17660/1

- 3 Plug thermometer into defroster nozzle at the left.
- 4 Keep engine running at approx. 2000/min after attaining operating temperature.
- 5 Read thermometer after approx. 5 minutes. Thermometer should indicate approx.  $55$  to  $60^{\circ}\text{C}$ .

**Note:** If heating capacity is insufficient, check engine thermostat or mono valve and replace, if required.



183-20132